

CLAIMS

1. A turf comprising a combination of a superstrate and grass, wherein said superstrate is adapted to the soil-less growing of said grass; and wherein said combination of said superstrate and said grass is further adapted to selective formulation to suit the specific requirements of selected ones from a plurality of grassed surface applications.
2. The turf of claim 1 wherein said superstrate is formed from a mixture, said mixture including the ingredients of elastomeric granules, suitable binding emulsion, mineral aggregate, filler and slow release plant nutrient particles mixed in sufficient proportions so that, when laid and cured, said mixture produces a water permeable, resilient superstrate having air pockets through which a root system of said turf forming grass can penetrate.
3. The turf of claim 2 wherein said elastomeric granules include granules of recycled vehicle tyre rubber.
4. The turf of claim 2 wherein said elastomeric granules include granules of new rubber.
5. The turf of any one of claims 2 to 4 wherein said elastomeric granules include a mixture of granules of recycled rubber and granules of new rubber.

6. The turf of any one of claims 2 to 5 wherein said binding emulsion includes bituminous emulsion.
7. The turf of any one of claim 2 to 6 wherein said bituminous emulsion is polymer modified.
- 5 8. The turf of any one of claims 2 to 7 wherein said mineral aggregate is one or more selected from a set of aggregates in particulate form, said set including basalt, sand and crusher dust.
9. The turf of any one of claims 2 to 8 wherein said  
10 filler is one or more selected from a set of fillers in particulate form, said set including cement dust and fly-ash.
10. The turf of any one of claims 2 to 9 wherein said  
15 ingredients further include a chemical retardant adapted to slow processes of flocculation and coalescence, said processes acting so as to coat said particulate forms of said ingredients with said bituminous emulsion.
11. The turf of any one of claims 2 to 10 wherein said  
20 resilience of said superstrate is a function of the proportion of said elastomeric granules in said superstrate; higher proportions conferring correspondingly greater resilience to said superstrate.

12. The turf of any one of claims 2 to 11 wherein said resilience of said superstrate is a function of the average mesh size of said elastomeric granules.
13. The turf of any one of claims 2 to 12 wherein said  
5 water permeability of said superstrate is a function of said proportion of said elastomeric granules and said average mesh size of said elastomeric granules.
14. The turf of any one of claims 2 to 13 wherein said resilience and said water permeability are functions  
10 of the thickness of said superstrate.
15. The turf of any one of claims 1 to 14 wherein said grassed surface applications include the playing surfaces of a range of sporting activities.
16. The turf of claim 15 wherein said playing surfaces  
15 include a grassed surface adapted to the playing of tennis.
17. The turf of claim 15 wherein said playing surfaces include grassed surfaces adapted to any of a range of sports characterized by the term football.
- 20 18. The turf of claim 15 wherein said playing surfaces include a range of grassed surfaces adapted to the game of golf.
19. The turf of claim 15 wherein said playing surfaces include grassed surfaces adapted to the running of  
25 horse races.

20. The turf of any one of claims ... to ... wherein said turf is adapted for application to high wear areas around golf course bunkers.
21. The turf of any one of claims 1 to 14 wherein said  
5 turf is adapted for the minimization of erosion in water courses.
22. The turf of any one of claims 1 to 14 wherein said turf is adapted to the stabilisation of steep embankments.
- 10 23. The turf of any one of claims 1 to 14 wherein said grassed surface applications include the covering of non porous surfaces.
24. The turf of any one of claims 1 to 14 wherein the  
15 resilience of said superstrate is adapted to specified performance characteristics of any one of a plurality of sporting activities.
25. A method for the forming of a layer of a superstrate adapted to the soil less growing of grass so as to form a turf, said method including the steps of:
- 20 (a) combining in a suitable mechanical mixing machine ingredients including granulated elastomer, mineral aggregate, filler and slow release plant nutrient particles so as to produce a homogenous mixture;
- 25 (b) adding to said mechanical mixing device a suitable binding emulsion for chemical

interaction with said homogenous mixture so as to form a homogenous slurry.

26. The method of claim 25 wherein said granulated elastomer includes granules of new rubber.
- 5 27. The method of claim 25 wherein said granulated elastomer includes granules of recycled vehicle tyre rubber.
28. The method of claim 25 wherein said granulated elastomer includes a mixture of granules of recycled rubber and granules of new rubber.
- 10 29. The method of claim 25 wherein said binding emulsion includes a polymer modified bituminous emulsion.
30. The method of claim 25 wherein said mineral aggregate includes one or more selected from a set of aggregates in particulate form, said set including basalt, sand and crusher dust.
- 15 31. The method of claim 25 wherein said filler includes one or more selected from a set of fillers in particulate form, said set including cement dust and fly-ash.
- 20 32. The method of claim 25 wherein said ingredients further include a chemical retardant adapted to slow processes of flocculation and coalescence, said processes acting so as to coat said particulate forms of said ingredients with said bituminous emulsion.
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33. The method of claim 25 wherein said slurry is extruded from said mixing machine in a continuous strip of superstrate onto a surface of application so as to form, when cured, a homogenous water permeable and resilient layer.
34. The method of claim 25 wherein said slurry is extruded from said mixing machine in a continuous strip of superstrate onto a surface for curing into a homogenous water permeable and resilient layer, said layer adapted in thickness so as to allow lengths of said layer to be rolled into rolls for transport to a surface of application.
35. The method of claim 25 wherein said slurry is extruded from said mixing machine sequentially into trays for curing to form trays of superstrate, said trays of superstrate adapted for transport to a surface of application.
36. A method for the growing of grass on said superstrate of any one of claims 25 to 35 so as to form a turf, wherein said superstrate is seeded with a selected variety of grass seed to suit a predetermined grassed surface application.
37. A method for the growing of grass on said superstrate of any one of claims 25 to 35 so as to form a turf, wherein said superstrate is scarified prior to the seeding of said superstrate with a

selected variety of grass seed to suit a predetermined grassed surface application.

38. A method for the growing of grass on said superstrate of any one of claims 25 to 35 so as to form a turf, wherein sprigs of a selected species of grass are inserted into the upper surface of uncured superstrate so as to form a grassed surface when the roots of said grass have penetrated said superstrate.

39. A method for the growing of grass on said superstrate of any one of claims 25 to 35 so as to form a turf, wherein a pre-grown mat of washed substantially soil-less grass is laid onto the upper surface of cured superstrate so as to form a grassed surface when the roots of said grass mat have penetrated said superstrate.

40. A method for the growing of grass on said superstrate of any one of claims 25 to 35 so as to form a turf, wherein a pre-grown mat of washed substantially soil-less grass is pressed onto the upper surface of uncured superstrate so as to form a grassed surface when the roots of said grass mat have penetrated said superstrate.

41. A method for the application of the turf of claim 33 to a surface of application, said method including the steps of:

- (a) extruding strips of said slurry from said mixing machine directly onto said surface of application so as to form after curing a homogeneous, resilient water permeable superstrate,
- 5 (b) promoting the growth of grass on said superstrate by any one of the methods of:
- (iv) seeding said superstrate with a selected variety of grass seeds,
- (v) inserting sprigs of a selected variety of
- 10 grass into the partly cured surface of said superstrate,
- (vi) applying pre-grown, washed, substantially soil-less strips of grass mat to said superstrate surface.
- 15 42. A method for the application of the turf of claim 34 to a surface of application, said method including the steps of:
- (a) extruding strips of said slurry from said mixing machine onto a surface for curing so as to form a
- 20 superstrate,
- (b) promoting the growing of a selected variety of grass on said superstrate to form strips of turf,
- (c) rolling said strips into rolls suitable for transportation to said surface of application,
- 25 (d) laying said strips onto said surface of application.



43. A method for the application of the turf of claim 35 to a surface of application, said method including the steps of:

- 5 (a) extruding segments of said slurry into said trays to form trays of superstrate,
- (b) promoting the growing of a selected variety of grass on said superstrate to form trays of turf,
- (c) transporting said trays to said surface of application when required,
- 10 (d) laying said trays on said surface to form a contiguous array of turf segments.

44. A method for the surfacing of a sport playing area, said method including the steps of:

- 15 (a) preparing a subsurface to a required specification of levelness and to a required specification of water drainage and removal capacity;
- (b) identifying areas of said surface suitable for periodic replacement of said surface due to  
20 expected high wear;
- (c) selecting methods of application of said turf from any one of the methods of claims 41 to 43;
- (d) applying said turf to said surface.

45. A method of displaying advertising indicia on a  
25 surface for the playing of sport, said method including the steps of:

- (a) preparing predetermined segments of turf with selected said indicia;
- (b) removing selected portions equivalent in shape and extent to said segments from said surface;
- 5 (c) inserting said segments into said surface.

46. A method for the exchanging of advertising indicia for display on a grassed surface, said method including the steps of:

- (a) preparing and maintaining a range of  
10 predetermined segments of turf with selected said indicia;
- (b) extracting an existing segment of turf displaying existing advertising indicia;
- (c) inserting selected one of said range of segments  
15 into said surface.

47. A method for the maintenance of high wear areas of a sport playing surface, said method including the steps of:

- (a) surfacing said high wear areas with a selected one  
20 of prepared sections of turf comprising a resilient water permeable superstrate and grass; said sections including strips of said turf and segments of said turf formed in trays;
- (b) removing worn sections of said turf when required;
- 25 (c) replacing said worn sections with said prepared sections of turf.

48. A method of resurfacing an area of the turf of  
claim 42 or 43, said method including the steps of:

- (a) mechanically removing a sufficient depth of said  
superstrate and said grass to allow the laying of  
5 a fresh layer of superstrate;
- (b) extruding said slurry onto remaining superstrate  
sufficient to restore said superstrate to  
preexisting thickness when said slurry has cured;
- (c) promoting the growth of fresh grass on said  
10 superstrate.

49. A method for the recycling of water applied to the  
grassed surface of the method of claim 44, said  
method including the steps of:

- (a) preparing a subsurface with an interconnected  
15 array of water collecting elements said elements  
adapted to the conveying of water to at least one  
collection point;
- (b) providing a storage device for the collection of  
said water from said at least one collection  
20 point;
- (c) providing pumping means for the raising of said  
water at a pressure sufficient to allow for the  
distribution of said water to said turf.

50. A method of deriving revenue from a grassed surface;  
25 said method including the steps of:

(a) applying the turf of any one of claims 36 to 40 to  
a surface of application at a cost based on:

(v) method of application;

(vi) specifications of said superstrate and said  
5 grass;

(vii) area to be covered;

(viii) maintenance provisions.